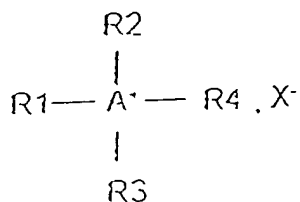


AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended)

A compound of the formula



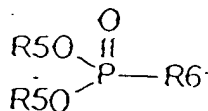
I

RECEIVED

NOV 12 2003

TECH CENTER 1600/2900

wherein A is phosphorus; X is an anion; and wherein R1 consists of



V

wherein R5 is a lipid moiety and R6 is alkyl of 2 to 3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 ~~is selected from the group consisting~~
consists of:

- alkyl of 1 to 4 carbon atoms,
- ~~-CH₂-CH₂P⁺-(R'⁶R⁷R⁸) wherein R'⁶-R⁶, R⁷ and R⁸ are alkyl of 1 to 4~~
carbon atoms and
- ~~—CH₂-CO₂R⁹, and R⁹ is alkyl of 1 to 4 carbon atoms.~~

Claim 2 (previously presented)

The compound of claim 1, wherein the anion X is selected from the group consisting of halide, $-\text{CF}_3\text{SO}_3^-$, CF_3CO_2^- and $-\text{HSO}_4^-$.

Claim 3 (original)

The compound of claim 2, wherein the halide is selected from the group consisting of Cl^- , Br^- and I^- .

Claim 4 (previously presented)

The compound of claim 1 wherein R5 is selected from the group consisting of:

- (i) alkyl or alkenyl of 10 to 22 carbon atoms comprising 0, 1 or 2 olefinic double bonds,
- (ii) a cholesteryl derivative or
- (iii) a perfluoro alkyl of 10 to 22 carbon atoms.

Claim 5 (previously presented)

The compound of claim 1, wherein the R5 is selected from the group consisting of $\text{C}_{14:0}$, $\text{C}_{18:1}$, $\text{C}_{18:2}$, $\text{C}_{15:0}$, $\text{C}_{17:0}$ or $\text{C}_{17:2}$, wherein the first number designates the number of carbon atoms and the second number designates the number of double bonds.

Claim 6 (previously presented)

The compound of claim 1, wherein R1 is of formula V and R2 and R4 are independently a member selected from the group consisting of CH₃, C₂H₅, -nC₃H₇ or isopropyl, with n being an integer from 1, 2 or 3.

Claim 7 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkyl.

Claim 8 (currently amended)

The compound of claim 1 wherein R1 has the formula II, III or V and R5 consists of alkenyl and R6 is ~~methyl~~ ethyl.

Claim 9 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III, and V and R5 consists of alkyl and R6 is ethyl.

Claim 10 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkenyl and R6 is ethyl.

Claim 11 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkyl and R6 is propyl.

Claim 12 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkenyl and R6 is propyl.

Claim 13 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of cholesteryl $-\text{[C(O)N-CH}_2\text{-CH}_2\text{-O]}$

Claim 14 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III or V, R5 consists of perfluoroalkyl and R6 is ethyl.

Claim 15 (previously presented)

The compound of claim 1 wherein R1 has the formula II, III or V, R5 consists of $(\text{C}_{17}\text{H}_{33}\text{C(O)O})$ and R6 is propyl.

Claim 16 (currently amended)

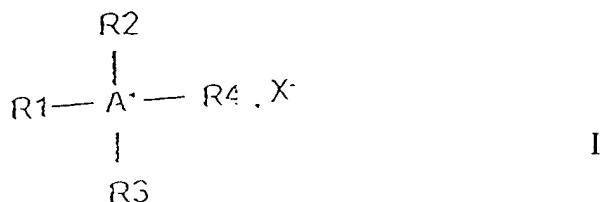
A compound according to claim 1 wherein R1 has the formula II, III or V, and
R5 consists of (C₁₈H₃₅) ~~and R6 is 1,2-dideoxyglycerol.~~

Claim 17 (currently amended)

The compound of claim 1 wherein R1 has the formula II, III, or V, and R5
consists of cholesteryl ~~and R6 is [C(O)-CH₂-CH₂].~~

Claim 18 (currently amended)

A vesicle comprising a compound of the formula



wherein A is phosphorus; X⁻ is an anion; and wherein R1 is



wherein R5 is a lipid moiety and R6 is alkyl of 2 to ~~{4}~~3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 ~~is selected from the group~~
~~consisting~~ consists of:

$\text{CH}_2\text{-CH}_2\text{P}^+$ wherein R^1 , R^6 , R^7 and R^8 are alkyl of 1 to 4 carbon atoms

and

~~$\text{-CH}_2\text{-CO}_2\text{R}^9$, and R^9 is alkyl of 1 to 4 carbon atoms.~~

Claim 19 (previously presented)

A vesicle consisting essentially of a compound of claim 1.

Claim 20 (original)

The vesicle of claim 18, which is a small unilamellar vesicle.

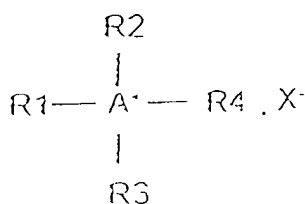
Claim 21 (original)

The vesicle of claim 18, which is a multimellar vesicle.

Claim 22 (currently amended)

A method for introducing in vitro a nucleic acid in a cell host comprising the steps
of:

a) incubating said nucleic acid with a compound of the formula



I

wherein A is a phosphorus; X^- is an anion; and wherein R1 is



wherein R5 is a lipid moiety and R6 is alkyl of 2 to [4] 3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 is ~~selected from the group consisting~~
consists of:

an alkyl of 1 to 4 carbon atoms

~~$\text{CH}_2\text{CH}_2\text{P}^+(\text{R}^6\text{R}^7\text{R}^8)$, wherein R^6 , R^7 and R^8 are alkyl of 1 to 4 carbon~~
~~atoms and~~

~~$\text{CH}_2\text{CO}_2\text{R}^9$, and R^9 is alkyl of 1 to 4 carbon atoms to obtain complexes formed~~
between said nucleic acid and said compound, and

b) incubating the cell host with the complexes obtained at step a) whereby the
nucleic acid is introduced into the cell host.

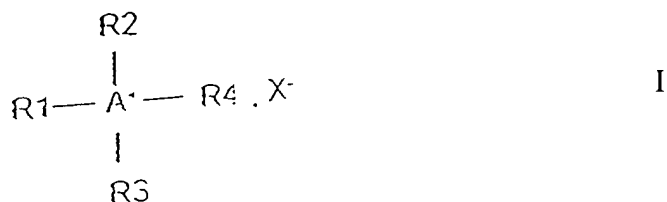
Claim 23 (previously presented)

The method of claim 22 wherein the compound is in the form of unilamellar
vesicles.

Claim 24 (currently amended)

A method for introducing in vivo a nucleic acid into cells of a host organism comprising the steps of:

a) incubating said nucleic acid with a compound of the formula



wherein A is phosphorus; X^- is an anion; and wherein R1 is



wherein R5 is a lipid moiety and R6 is alkyl of 2 to ~~{4}~~ 3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 ~~is selected from the group consisting~~
consists of:

an alkyl of 1 to 6 carbon atoms

~~$\text{CH}_2\text{CH}_2\text{P}^+(\text{R}'_6\text{R}_7\text{R}_8)$, wherein R'_6 , R_7 and R_8 are alkyl of 1 to 4 carbon atoms and~~

~~$\text{CH}_2\text{CO}_2\text{R}_9$, and R_9 is alkyl of 1 to 4 carbon atoms to obtain complexes formed~~
between said nucleic acid and said compound; and

b) administering the complexes obtained at step a) to said host organism

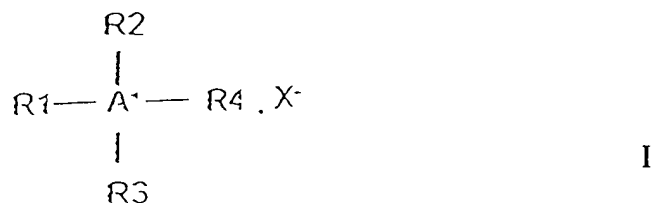
whereby said nucleic acid is introduced into the cell of the host organism.

Claim 25 (original)

The method of claim 24, wherein the organism is a mammal.

Claim 26 (currently amended)

A complex formed between a nucleic acid and a compound of the formula



wherein A is phosphorus; X^- is an anion; and wherein R1 is



wherein R5 is a moiety and R6 is alkyl of 2 to [4] 3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 ~~is selected from the group~~
consisting consists of:

an alkyl of 1 to 6 carbon atoms

~~$\text{CH}_2\text{CH}_2\text{P}^* - (\text{R}'_6\text{R}'_7\text{R}'_8)$, wherein R'_6 R'_7 and R'_8 are alkyl of 1 to 4 carbon atoms~~
and

~~CH₂-CO₂R⁹, and R⁹ is alkyl of 1 to 4 carbon atoms~~ to obtain complexes formed between said nucleic acid and said compound; and

b) administering the complexes obtained at step a) to said host organism whereby said nucleic acid is introduced into the cell of the host organism.

Claim 27 (original)

The complex of claim 26, wherein the nucleic acid comprises a polynucleotide which encodes an antisense polynucleotide.

Claim 28 (original)

The complex of claim 26, wherein the nucleic acid comprises a polynucleotide which encodes an antisense polynucleotide.

Claim 29 (original)

The complex of claim 26, wherein the polynucleotide encoding a polypeptide is operably linked to a regulatory sequence.

Claim 30 (previously presented)

A composition comprising a complex of claim 26.

Claim 31 (previously presented)

A pharmaceutical composition comprising a complex of claim 26.